

REMARKS/ARGUMENTS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and amended as necessary to more clearly and particularly describe the subject matter that Applicant regards as the invention. Review of the subject application in view of the present remarks is respectfully requested.

By the present amendment, claim 1 has been amended. Claims 12-16 have been added. Claim 13 states “wherein the cable-like second power transmission device includes a structure with a cable shape having a non-rectangular cross-section.” Support may be found on page 12, lines 6-8, which states “a structure, which has a cable shape, and similar function to the wire 8 may also be practically used.” As such, no new matter is believed entered. As such, it is now respectfully submitted that each of the claims is in condition for allowance.

Claims 1-6 were rejected under 35 USC § 112, first paragraph as failing to comply with the written description requirement. Specifically, the Examiner alleged that amended claim 1 contained new matter not originally described in the specification, namely the phrases “loop ends” and “removably.” With regard to the phrase “loop ends”, claim 1 has been amended and now states “ring-shaped ends.” Support for these amendments can be found in the disclosure as originally filed, and, therefore, no new matter has been added. In particular, support for the amendment may be found at least in paragraph [0016] as originally filed, which stated “the wire is made in a ring-shape” and “the aforementioned ring-shape of the wire 8 is not only a ring shape.” Accordingly, no

new matter is believed entered.

The Examiner further alleged that the phrase “removably” in claim 1 constituted new matter. Applicant respectfully disagrees. In distinction, the phrase “removably” was inherently disclosed in the specification at the time the application was filed. As stated in MPEP 2163, “While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure.” Similarly, “If an application discloses a device that inherently necessarily performs a function or has a property...The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter.” See MPEP 2163.07(a), emphasis added. Accordingly, as established in MPEP 2163.07, “The mere inclusion of dictionary or art recognized definitions known at the time of filing an application would not be considered new matter.” Emphasis added.

In the present case, the originally filed specification described on page 15, paragraph [0017] the attachment of the wire to the swing pulley. “The fixed side wall 11a of the connecting section 11 on which both ends of the wire 8 are fixed is mated with the cut section 18 of the swing pulley 7 shown in Fig. 3B and fixedly secured by using a screw 17.” See page 15, line 22 to page 16, line 1, emphasis added. Further, “the number of screws 17 is not intended to be limited to two and it may be possible to have one or three or more.” See page 16, lines 4-6. An inherently well known feature of a screw is an external thread for engaging an internal thread. As such, an inherent function of the screw that was well known at the time of filing was that the screw could be both inserted and removable. Therefore, the first fixing device being “removably, fixedly attached to said swing device” does not constitute new matter, as the phrase “removably”

is an inherent function of a screw. Consequently, support for the above referenced amendments can be found in the disclosure as originally filed. Accordingly, applicant respectfully requests withdrawal of the corresponding rejection of claims 1-6.

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Okawa et al. (U.S. 2002/0062080), hereinafter “Okawa”. Claim 1 recites, “a first fixing device to which one of the ring-shaped ends of the second power transmission device is fixed and which is removably, fixedly attached to said swing device together with said second power transmission device.” Okawa fails to teach such structure. Applicant respectfully traverses this rejection at least for the following reasons.

The Examiner concedes that Okawa fails to teach that the first fixing device is removably attached to swing device. However, the Examiner alleges that the projections in Okawa would necessarily be removable using known manufacturing techniques. Applicant respectfully disagrees. In distinction, Okawa clearly teaches that the projections 5a, 9a are formed as one piece with the respective pulleys 5, 9, and, therefore, cannot be removable. Okawa states that “The synchronizing means is constituted by a first projection 5a formed on the driven pulley 5, a second projection 9a formed on the drive pulley 9.” See Col. 8, lines 17-19, emphasis added. Moreover, Okawa states “The first projection 5a radially projecting from the outer peripheral surface of the driven pulley 5” and “the second projection 9a radially projecting from the outer peripheral surface of the drive pulley 9.” See Col. 8, lines 21-28. Further evidence of the integrally formed, non-removable projections in Okawa can be seen in Fig. 3, as the projections 5a, 9a have identical hatching as that of the respective pulleys. As such, the projections in Okawa cannot be removable. Consequently, Okawa fails to teach the above cited

structure of claim 1.

In addition, the Examiner alleges that the first fixing device does not have any further characteristics other than being deformable by external forces. However, the first fixing device has a characteristic to have holes 21 and 22 penetrating the center section and the side wall section as shown in paragraphs 0021 and 0022 of the description of the present application. The both ends of the wire passed from the hole 21 are respectively permitted to pass through the upper part and the lower part of the hole 22. The wire is squashed in the first fixing device and the squashed wire part increases. Therefore, it is possible to reduce the possibility of slipping and coming out of the wire from the first fixing device. However, Okawa et al. fails to teach the above characteristic of the invention of the present application.

Claim 1 further recites, “cable-like second power transmission device.” Okawa fails to teach such structure. Applicant respectfully traverses this rejection at least for the following reasons.

The Examiner alleges that the drive belt 10 of Okawa “can be described as cable-like, particularly when the belt width is narrow.” Applicant respectfully disagrees. In distinction, the drive belt 10 “is formed into a flat strip having a rectangular cross section.” See Col. 6, lines 56-57. The rectangular cross section of the drive belt 10 can be seen at least in Figs. 5B and 5C. The drive belt 10 cannot possibly be cable-like, as stated in claim 1, since the drive belt 10 must include first and second holes 10a, 10b for securing the belt 10 to the pulleys 5, 9. The first and second holes are required for securing the belt to the pulleys, and, as such, a cable-like belt would render securing impossible. Consequently, Okawa fails to teach the above cited structure of claim 1.

Claims 2-6 depend from independent claim 1 that is believed to be in condition for allowance as set forth above. Accordingly, Applicant respectfully requests withdrawal of the corresponding rejection of claims 2-6 as depending directly or indirectly from allowable claim 1.

Independent claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Okawa. Claim 7 recites, “the rotating operation of the drive pulley being transmitted to the swing pulley by a wire through the at least one slidable intermediate pulley.” Newly added dependent claim 12 states “wherein the cable-like second power transmission device includes a wire.” Okawa fails to disclose such structure.

As stated above with respect to claim 1, Okawa discloses a drive belt 10 having a rectangular cross section. The drive belt 10 must be flattened and rectangularly shaped in order to accommodate projections in the first and second holes 10a, 10b. The drive belt 10 cannot possibly be a wire, as a wire could not include the first and second holes. Furthermore, a wire would not “prevent the slip, i.e. a relative rotation between the driven pulley 5 and the drive pulley 9” since holes 31a-31c in the drive belt (shown in Fig. 4A) have approximately the same size as the projections 5a, 9a. See Col. 8, lines 3-4. Consequently, Okawa fails to teach the above cited structure of independent claim 7 or dependent claim 12.

Claims 8-11 depend from independent claim 7 that is believed to be in condition for allowance. Accordingly, Applicant respectfully requests withdrawal of the corresponding rejection of claims 8-11 as depending directly or indirectly from allowable claim 7.

Claim 16 has been added. Claim 16 recites “wherein the at least one slidable intermediate pulley is movable in a direction parallel to the rotation shaft of the ultrasonic transducer unit.” Support for the amendment can be found in the disclosure as originally filed, specifically in claim 6. Okawa fails to disclose such structure.

In distinction, Okawa discloses an idler roller 21 in pressing contact with the drive belt 10. As shown in Fig. 2, the idler roller 21 maintains contact with the flat “outer surface” of the drive belt 10 and is movable in a direction perpendicular to the drive belt 10. Referring still to Fig. 2, the alleged rotation shaft, driven shaft 2, extends through the center of the driven pulley 5, such that the driven shaft 2 would extend into and out of the page. Consequently, the idler roller 21 must move in a direction perpendicular to the driven shaft 2. It would be impossible for the idler roller 21 to move parallel to the driven shaft 2, as the idler roller 21 would then contact a side edge of the drive belt 10, and could not impart any tension. Therefore, Okawa fails to teach “at least one slidable intermediate pulley is movable in a direction parallel to the rotation shaft” as stated in claim 16. As such, claim 16 is believed to be in condition for allowance.

Claims 17 and 18 have been added. Claim 17 states “wherein the second fixing device is used for a simultaneous adjustment of origin position angle of the ultrasonic transducer unit and the motor.” Claim 18 states “a fixing section fixing, to the drive pulley, one of a ring-shaped ends of a wire, which is used for a simultaneous adjustment of origin position angle of the ultrasonic transducer unit and the motor.” Okawa fails to disclose such structure.

In distinction, the second fixing device recited in claim 17 or the fixing section

recited in claim 18 are used for a simultaneous adjustment of origin position angle of the ultrasonic transducer unit and the motor as shown in paragraphs 0015, 0016, and 0020 of the description of the present application. Therefore, the invention of claim 17 and claim 18 enable the simultaneous adjustment of origin position angle of the ultrasonic transducer unit and the motor even if the wire is fixed in the drive pulley and the swing pulley. On the other hand, the projection 5a in Okawa is inserted in the hole 31a of the drive belt 31 and the drive belt 31 is completely fixed to the drive pulley and the swing pulley. Therefore, when the adjustment of origin position angle of the ultrasonic transducer is carried out after the fixation of the drive belt to the swing pulley and the drive pulley, the displacement of the origin position angle of the drive motor 6 occurs and the simultaneous adjustment of origin position angle of the ultrasonic transducer unit and the drive motor is not possible. Thus, the inventions of the present application are totally different from the disclosure of Okawa. Therefore, applicants believe that claims 1 to 18 of the present application are in condition for allowance. Withdrawal of the rejections is respectfully requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No.: NIHE-40635.

Respectfully submitted,
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